**USDA-Soil Conservation Service**

**Notice of Source Identified Plant Release**

**Sideoats Grama**

The USDA-Soil Conservation Service (SCS), the University of Northern Iowa (UNI), the (Iowa) County Integrated Roadside Vegetation Management Program (IIRVMP), the Iowa Department of Transportation (IDOT), and the Iowa Crop Improvement Association (ICIA) announce the release of source identified (Northern Iowa) germplasm of sideoats grama, *Bouteloua curtipendula* (Michx.) (Torr.).

The sideoats grama has been assigned the SCS accession number 9062278.

**Origin:** Northern Iowa

**Ecotype Description:**

Sideoats grama is a warm season perennial grass of mid-height (three feet, 1 meter). It is generally considered a bunch grass but has short scaly rhizomes and rarely forms a sod. Leaves of sideoats are flat with a width of about one centimeter (1/2 inch). An identifying characteristic is perpendicular, often opposite, hairs on the margins of the leaves. These hairs grow from gland-like bumps which may be easily seen with a magnifying lens. Oat-like seeds hang from one side of the stem (rachis), hence "side-oats".

Sideoats seeds per pound average 191,000. A seeding rate of 25 to 30 pure live seeds (PLS) per linear foot in 30 inch (30 inches to 40 plus inches) rows (two to three PLS pounds/acre) for seed production is sufficient. Broadcast rates for pasture seeding should run six to eight PLS pounds per acre (15 to 25 bulk pounds/acre). Seed should be planted 1/4 to 1/2 inch deep in a firm relatively weed free seedbed. Seedling vigor is good and stands are comparatively easy to establish where competition is controlled. Burndown chemical sprays have been used to reduce competition when reduced tillage methods are used in establishment. Post-emergence broadleaf sprays have been used when sideoats is past the four-leaf stage. Seed yields are good and seed have been commonly combined. Yields of 400 pounds per acre have been commonly harvested on managed stands.

Collections of sideoats from east to west across Iowa prevent positive assessment of all pollination or chromosome characteristics. Sideoats is known to be variable in chromosome numbers and in reproduction mechanisms. Plants are often cross-pollinated, with many hybrids being formed in the area of adaptation. Also, plants with chromosome numbers greater than 52 are known to commonly reproduce asexually. Pollination may still be required for seeds to form. For isolation requirements, sideoats will be considered cross-pollinated.

Sideoats is adapted to most upland soils. Ecotypes are adapted to areas with as little as 14 inches to over 50 inches of average annual precipitation. The number of collections from each zone in Iowa

guarantees the adaptation of releases to the entire zone. Sideoats grows in most states east of the Rocky Mountains.

**Site Description:**

Collections from the following locations are included in the composite of sideoats grama, Northern Iowa origin (9062278).

| County | Section | Range | Township | Soil Types |
|---|---|---|---|---|
| Buena vista | 9 & 10 | 38W | 93N | Stordon loam |
| | | | | Galva silty clay loam |
| | | | | Spillville loam |
| Clay | 16 | 35W | 95N | Clarion loam |
| | | | | Stordon loam |
| O'Brien | 24 | 39W | 94N | Terril loam |
| | | | | Salida sandy loam |
| | | | | Spillco loam |
| | | | | Ocheydon loam |
| Palo Alto | 7 | 33W | 95N | Wacousta silty loam |
| | 32 | 34W | 97N | Nicollat loam |
| | | | | Webster silty clay loam |
| Pocahontas | 20 | 34W | 93N | Webster clay loam |
| | 25 & 36 | 34W | 93N | Nicollet clay loam |
| | 2 | 31W | 90N | Clarion loam |
| Wright | 7 | 23W | 93N | Coland clay loam |
| | | | | Clarion Stordon complex |
| | | | | Pits, sand, gravel complex |

**Climate:** The average annual temperature is 51 degrees Fahrenheit. July is the warmest month with an average high of 87 degrees and low of 65 degrees. January is the coldest month with an average high of 31 degrees and low of 12 degrees. The average annual precipitation for this region is 33 inches with much of this coming during the growing season. The average frost-free growing period runs from April 25 to October 9.

**Literature Review:** See attachment

**Availability of Plant Materials:**

Breeders material is being produced by the Elsberry, Missouri Plant Materials (PM) Center and the UNI.

**Release Approved By:**

Russell C. Mills — Chairman, PM Advisory Committee, SCS

Constantine W. Currts — Representative UNI

Daryl D. Smith — Program Director IIRVMP

Robert E. Lawson — Secretary/Treasurer ICIA

Representative IDOT

Jeffrey R. Vonk — Iowa State Conservationist

**References:**


Forages; p. 235; Heath, Metcalf, and Barnes; Iowa State University Press, Ames, Iowa, 1973.

Grass-The Yearbook of Agriculture, 1948; pp. 655-656; U.S. Dept. of Agric.; U.S. Gov. Printing Office, Washington D. C., 1948.

Pasture and Range Plants; p. 19; Phillips Petroleum Co.; Bartlesville, OK, 1974.

Plant Specification; pp. 331-337; Verne Grant; Columbia University Press, 1971.

Prairie Plants of Illinois; p. 76; John W. Voight, Dept. of Botany, S. Illinois Univ. and Robert H. Mohlenbrock, Chairman, Dept. of Botany, S. Illinois Univ.; Printed by authority of the State of Illinois in cooperation with the Ill. Dept. of Conservation, Div. of Forestry, Springfield, Ill.

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**Source Identified Release**

**General**

**Iowa Sideoats Grama**

**State of Problem:**

Currently many conservation groups support the planting of native species for erosion control and for the maintenance of related resources. Many locally adapted native forb and grass species are currently not available or are not available in sufficient quantities to meet these needs. The Iowa Department of Transportation (IDOT) and the Iowa Integrated Roadside Vegetation Management Program (IIRVMP) have emphasized the need for native materials in stabilizing roadbanks. A lack of sufficient seed sources of this kind of material limits the reestablishment of native plants and correspondingly limits native habitat for wildlife.

**State of Need:**

Well adapted native grass and forb species offer many advantages as sustainable vegetative cover for stabilization and management of soil and water resources. Native plant communities resist noxious weed invasion, provides excellent erosion control, and generally require relatively low maintenance. The lack of species or lack of sufficient seed supplies limits the use of these plants in conservation work.

Producers are often unwilling to risk the dollars needed to collect and increase these materials without guarantee of a ready market. By collecting the materials, providing the initial increase, and providing an initial market through the IDOT this program brings plant needs to the attention of producers and provides a means of reducing their risk.

The implementation of this program and release of this species will help solve a high priority problem identified by the Iowa State Plant Materials Committee. Erosion control is the top priority of this committee. Additionally, other priority items such as water quality and wildlife needs will be benefited through this plant release. The seed source problem will be solved for this native species and seed will be available in sufficient quantities to be used in conservation seedings. The plant when released will be immediately marketed to the IDOT and IIRVMP. Development of other markets are anticipated through promotion by wildlife organizations and through private interest when IDOT needs have been satisfied.

## LITERATURE REVIEW

*Bouteloua curtipenula (Mich.)* Torr.
sideoats grama

Sideoats grama is a native perennial grass having extensive fibrous root system. It is winter hardy and drought resistant and is adapted to a wide range of soil and climatic conditions. It is one of the most widely distributed grasses of the Great Plains. It is found in mixture with blue grama, buffalograss, and little bluestem. It predominates in this mixture on shallow soils, steeply sloping lands, deep sand, and exposed sites. It is found on the slopes of mountains, is common in shallow eroded soils, and may be a minor grass in the tall grass prairies. It remains in soils of alkaline reaction in low rainfall and low altitude belts longer than in neutral or acid soils.

Although sideoats grama has short underground stems, it seldom forms a dense sod under the conditions of soil and climate existing where it is most common.

Sideoats grama produces leafy forage that is palatable to all classes of livestock. Its principal use is for grazing but good quality hay may be produced if mowing is done at the right stage of growth. It can be used in pasture mixtures in most of the Great Plains. Exceptions to this are the deep sands of the Rio Grande Plain and other parts of southern Texas at lower altitudes where the rainfall is below 14 inches.

This grass ranks very high for conservation use, owing to the vigor of its seedlings and the ease with which it is established on severely eroded soils. Ordinarily it is seeded in mixtures with other native grasss species with which it occurs naturally. Growth begins in the spring and continues through the summer. Mature plants normally reach a height of two to three feet.

Sideoats grama is one of the easiest grasses to grow under cultivation. It should be planted in rows and cultivated like any other row crop. Yields of seed under dry-land cultivation range from 100 to 300 pounds, and under irrigation from 400 to 600 pounds or more per acre in one or two cuttings a year. For seed production, a seeding rate of 25 to 30 pure live seed (PLS) per linear foot (two to three PLS pounds per acre) in 30 inch rows should be sufficient. Broadcast rate for pasture seedings should run six to eight pounds PLS per acre. Seed should be planted 1/4 to 1/2 inch deep in a firm relatively weed free seedbed. Seedling vigor is good and stands should be relatively easy to establish where competition is control.

For isolation considerations, sideoats is considered cross pollinated.

Sideoats seedlings are more vigorous than are those of other warm-season grasses. Stands establish quickly and can be cropped by their

second year. Weed control and nitrogen may be needed to help stands develop.

Sideoats can tolerate moderate grazing pressures but not as well as does blue grama. It should be grazed lightly. It is very palatable to livestock in spring and summer but only fair in the fall. It remains palatable into the winter. Its principal pests are grasshoppers and rusts.

Seed can be easily harvested by means of grass seed strippers or straight combining. It does not shatter as easily as blue grama. Seed yields under cultivation and irrigation can reach 400 pounds per acre.

## LITERATURE REVIEW

**Bouteloua curtipendula** (Mich.) Torr.
sideoats grama

1. The Grassland Farm Series, By W. W Wheeler & D. D. Hill, 1957, p 567-568

2. The Manual of The Grasses of The United States, By A. S. Hitchcock 1950, p 535